

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1-11. (canceled).

12 (withdrawn): Very high mechanical strength steel, characterised in that the chemical composition thereof comprises, in % by weight:

0.060% ≤ C ≤ 0.250%

0.400% ≤ Mn ≤ 0.950%

Si ≤ 0.300%

Cr ≤ 0.300%

0.100% ≤ Mo ≤ 0.500%

0.020% ≤ Al ≤ 0.100%

P ≤ 0.100%

B ≤ 0.010%

Ti ≤ 0.050%

the balance being iron and impurities resulting from the production operation, the microstructure thereof being constituted by ferrite and martensite.

13. (withdrawn): Steel according to claim 12, characterised in that it further comprises:

0.080% ≤ C ≤ 0.120%

0.800% ≤ Mn ≤ 0.950%

Si ≤ 0.300%

$$\text{Cr} \leq 0.300\%$$

$$0.100\% \leq \text{Mo} \leq 0.300\%$$

$$0.020\% \leq \text{Al} \leq 0.100\%$$

$$\text{P} \leq 0.100\%$$

$$\text{B} \leq 0.010\%$$

$$\text{Ti} \leq 0.050\%$$

the balance being iron and impurities resulting from the production operation.

14. (withdrawn): Steel according to claim 12, characterised in that it further comprises:

$$0.080\% \leq \text{C} \leq 0.120\%$$

$$0.800\% \leq \text{Mn} \leq 0.950\%$$

$$\text{Si} \leq 0.300\%$$

$$\text{Cr} \leq 0.300\%$$

$$0.150\% \leq \text{Mo} \leq 0.350\%$$

$$0.020\% \leq \text{Al} \leq 0.100\%$$

$$\text{P} \leq 0.100\%$$

$$\text{B} \leq 0.010\%$$

$$\text{Ti} \leq 0.050\%$$

the balance being iron and impurities resulting from the production operation.

15. (withdrawn): Steel according to claim 12, characterised in that it further comprises:

$$0.100\% \leq \text{C} \leq 0.140\%$$

$$0.800\% \leq \text{Mn} \leq 0.950\%$$

$$\text{Si} \leq 0.300\%$$

$\text{Cr} \leq 0.300\%$

$0.200\% \leq \text{Mo} \leq 0.400\%$

$0.020\% \leq \text{Al} \leq 0.100\%$

$\text{P} \leq 0.100\%$

$\text{B} \leq 0.010\%$

$\text{Ti} \leq 0.050\%$

the balance being iron and impurities resulting from the production operation.

16. (withdrawn) Very high mechanical strength sheet of steel according claim 12, characterised in that it is coated with zinc or zinc alloy.

17. (currently amended): Method for producing a very high mechanical strength steel sheet coated with zinc or zinc alloy according to claim 16, characterised in that it ~~comprises~~comprising the steps of:

- producing a slab having a chemical composition, in % by weight:

$0.060\% \leq \text{C} \leq 0.250\%$

$0.400\% \leq \text{Mn} \leq 0.950\%$

$\text{Si} \leq 0.300\%$

$\text{Cr} \leq 0.300\%$

$0.100\% \leq \text{Mo} \leq 0.500\%$

$0.020\% \leq \text{Al} \leq 0.100\%$

$\text{P} \leq 0.100\%$

$\text{B} \leq 0.010\%$

$\text{Ti} \leq 0.050\%$

the balance being iron and impurities resulting from the production operation of the slab,
the microstructure thereof being constituted by ferrite and martensite,

- hot-rolling then cold-rolling the slab in order to produce a sheet,
- heating the sheet at a rate of between 2 and 100°C/s until a holding temperature of between 700 and 900°C is reached,
- cooling the sheet at a rate of between 2 and 100°C/s until a temperature is reached which is close to that of a bath containing molten zinc or a zinc alloy, then
- coating the sheet with zinc or a zinc alloy by means of immersion in the bath and cooling it to ambient temperature at a cooling rate of between 2 and 100°C/s.

18. (currently amended): Method according to claim 17, ~~characterised in that~~ wherein
the sheet is kept at the holding temperature for from 10 to 1000 seconds.

19. (currently amended): Method according to claim 17, ~~characterised in that~~ wherein
the bath containing molten zinc or a zinc alloy is kept at a temperature of between 450 and 480°C, and in that the immersion time of the sheet is in the order of between 2 and 400 seconds.

20. (currently amended): Method according to claim 17, ~~characterised in that~~ wherein
the bath principally contains zinc.

21. (withdrawn): Use of a very high mechanical strength sheet of steel coated with zinc or zinc alloy, according to claim 16, in the production of automotive components.

22. (new): Method according to claim 17, wherein $0.800\% \leq Mn \leq 0.950\%$.